

layer;

C'
D' an upper quantum well structure periodically disposed on said intermediate layer along the resonator direction, said upper quantum well structure having a lamination of alternately stacked upper well layer and upper barrier layer having a band gap broader than the upper well layer; and

a guide layer covering said upper quantum well structure, contacting side walls of said upper quantum well structure and an upper surface of said intermediate layer, the guide layer having a band gap broader than the upper well layer,

wherein envelope of the upper quantum well structure is formed by etched profile which extends to and exposes said intermediate layer.